

ADMINISTRATIVE AMENDMENT
TO MONTANA AIR QUALITY PERMIT

Date of Mailing: August 20, 2018

Name of Applicant: Barretts Minerals, Inc.

Source: Dillon Talc Processing Facility

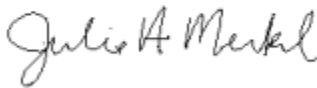
Location: 8625 MT Hwy 91 South, Dillon, MT 59725

Proposed Action: The Department of Environmental Quality (Department) proposes to issue an Administrative Amendment, with conditions, to the above-named permittee. The permit will be assigned #1995-20. The permittee may appeal the Department's decision to the Board of Environmental Review (Board). A request for hearing must be filed by September 4, 2018. This permit shall become final on September 5, 2018, unless the Board orders a stay on the permit.

Proposed Conditions: See attached.

Procedures for Appeal: The permittee may request a hearing before the Board. Any appeal must be filed before the final date stated above. The request for hearing shall contain an affidavit setting forth the grounds for the request. Any hearing will be held under the provisions of the Montana Administrative Procedures Act. Submit requests for hearing in triplicate to: Chairman, Board of Environmental Review, P.O. Box 200901, Helena, Montana 59620.

For the Department,



Julie A. Merkel
Permitting Services Section Supervisor
Air Quality Bureau
(406) 444-3626



Rhonda Payne
Air Quality Scientist
Air Quality Bureau
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JM:RP
Enclosure

MONTANA AIR QUALITY PERMIT

Issued To: Barretts Minerals, Inc.
8625 MT Hwy 91 South
Dillon, MT 59725

MAQP: #1995-20
Administrative Amendment (AA) Request
Received: 7/20/2018
Department's Decision on AA: 8/20/2018
Permit Final:

A Montana Air Quality Permit (MAQP), with conditions, is hereby granted to Barretts Minerals, Inc. (BMI), pursuant to Sections 75-2-204 and 211 of the Montana Code Annotated (MCA), as amended, and Administrative Rules of Montana (ARM) 17.8.740, *et seq.*, as amended, for the following:

SECTION I: Permitted Facilities

A. Plant Location:

BMI's existing talc processing facility is located at the BMI Mill Complex, approximately 7 miles south of Dillon. The legal description for the site is the East ½ of Section 17, Township 8 South, Range 9 West, in Beaverhead County, Montana (Latitude/Longitude 45.13645, -112.73716). A complete list of the permitted equipment is contained in Section I.A of the Permit Analysis.

B. Current Permit Action:

On July 20, 2018, BMI submitted to the Department of Environmental Quality (Department) a de minimis request to remove the existing wash plant (EU 032) and replace it with an optical sorting wash plant (EU 099). In addition, BMI requested that a new wash plant jaw crusher (EU 097) and wash plant cone crusher (EU 098) be added. The total potential to emit from the additional equipment is below 5 tons per year total; therefore, the action is considered de minimis under ARM 17.8.745(1)(a). The existing wash plant jaw crusher, EU 067, will be removed from normal operations but will be retained as backup equipment.

The Department is also updating the MAQP to include a December 9, 2011, de minimis request for the addition of a new talc mill. The mill and the feed bins included the installation of fabric filter reclaim systems (FFRS). This new equipment allowed BMI to produce medium-grind product while not increasing the facility-wide production capacity. Section I.A Table 1 of the Permit Analysis has been updated to include the new emitting points approved as part of the 2011 de minimis request.

The current permit action modifies the permit to include the new emitting units, the 2011 de minimis change, updates the emissions inventory and updates the permit to reflect current permit language, format, and rule references.

SECTION II: Limitations and Conditions

A. Emission Control Requirements

1. BMI shall install, operate and maintain all emission control equipment as specified and documented in BMI's MAQP(s) (ARM 17.8.749).

2. The following emission points contained in Table I shall be vented to baghouses (ARM 17.8.749):

Table 1	
Title V Operating Permit (#OP1995) EU Identification	Equipment/System Description
EU 002	#1 Roller Mill
EU 003	#2 Roller Mill
EU 004	#3 Roller Mill
EU 005	#1 Roller Mill-Nuisance
EU 006	#2 Roller Mill-Nuisance
EU 007	#1 ACM Feed Bin
EU 008	#1 Jet Mill Crude Bin
EU 009	#2 Jet Mill Crude Bin
EU 010	Beneficiation Crude Silos, Bucket Elevator, and Nuisance
EU 012	Pellet Nuisance - East
EU 013	Pellet Nuisance - West
EU 014	#3 Jet Stream Classifier
EU 015	Talc Compaction System (TCS)
EU 016	#4 Jet Stream Classifier Feed Bin
EU 017	Bulk Loadout - Spouts #1, #2, and #3
EU 018	#3 Roller Mill Crude Bins
EU 020	Packout Packers, East and West
EU 022	Pump Stations
EU 024	Silo #1 through
EU 025	Silo #2
EU 026	Silo #3
EU027	Silo #4
EU 028	Silo #5
EU 029	Silo #6
EU 030	Silo #7
EU 031	Silo #8
EU 034	#2 Jet Mill Pack Bins
EU 035	#2 Jet Mill
EU 036	#3 Jet Mill
EU 037	#1 Jet Mill and #4 Jet Mill
EU 039	#3 and #4 Hammermills
EU 041	Packout Reclaim
EU 042	#1 and #2 Jet Stream Classifiers
EU 043	#1 and #2 Hammermills
EU 044	Centralized Reclaim
EU 045	Dry Mill Input (Cone Crusher)
EU 048	Beneficiation Dryer
EU 050	Jet Mill Reclaim System
EU 052	Silo #9
EU 053	Silo #10

Table 1	
Title V Operating Permit (#OP1995) EU Identification	Equipment/System Description
EU 054	#1 ACM Mill
EU 055	East Coated Talc Feed Bin – Silo #11
EU 056	West Coated Talc Feed Bin – Silo #12
EU 057	Coated Talc Small Bag Packer Bin
EU 058	Coated Talc Semi-bulk Packer Bin
EU 059	Pelletizer Dryer System
EU 060	Pellet Loadout Conveyor
EU 061	Pelletizer South Feed Bin
EU 062	Pelletizer North Feed Bin
EU 063	#1 Semi-bulk Feed Bin
EU 064	#2 Semi-bulk Feed Bin
EU 065	K-tron Feed Bin
EU 077	West Coated Talc Product Bin
EU 078	East Coated Talc Product Bin
EU 079	ACM Blending Crude Bin
EU 080	Beneficiation Product Silos
EU 082	Roller Mill Rejects (Throwouts) Silo
EU 084	CPS Silo
EU 085	Silo #15
EU 086	Centralized Vacuum System
EU 087	Silo #16
EU 088	ACM #2 Mill
EU 092	#5 Jet Mill
EU 093	Silo #17
EU 094	#3 ACM
EU 095	#3 ACM Wet Crude Bin
EU 096	#3 ACM Dry Crude Bin
EU 099	Optical Sorting Plant (specifically, dry screen and two optical sorters within plant)
N/A	All other existing bins, elevators, and transfers (excluding material handling by trucks or loaders) not identified above which existed at the plant prior to August 31, 1983, and those that exhaust to the baghouses identified in Section I.A of the Permit Analysis, unless otherwise noted.

3. The ACM surface vacuum (EU 089) shall be vented inside the Roller Mill Rejects (Throwouts) Silo (EU 082) (ARM 17.8.749).

B. Emission Limitations

1. BMI shall not cause or authorize emissions to be discharged into the outdoor atmosphere from any sources installed on or before November 23, 1968, that exhibit an opacity of 40% or greater averaged over 6 consecutive minutes (ARM 17.8.304(1)).

2. BMI shall not cause or authorize emissions to be discharged into the outdoor atmosphere from any sources installed after November 23, 1968, unless otherwise specified, that exhibit an opacity of 20% or greater (ARM 17.8.304(2)).
3. Activity on talc tailings piles shall be conducted to minimize fugitive dust and all transfer and handling of ore and tailings shall be conducted in a manner to minimize the material fall distances to maintain compliance with the 20% opacity limitation in Section II.B.2 (ARM 17.8.308).
4. BMI shall not cause or authorize emissions to be discharged into the atmosphere from haul roads, access roads, parking lots, or the general plant property without taking reasonable precautions to control emissions of airborne particulate matter (PM) (ARM 17.8.308).
5. BMI shall treat all unpaved portions of the access roads, parking lots, and general plant area with water and/or chemical dust suppressant as necessary to maintain compliance with the reasonable precautions limitation in Section II.B.4 (ARM 17.8.749).
6. BMI shall not cause or authorize to be discharged into the atmosphere particulate emissions exceeding 0.02 gr/dscf from the #1 Jet Mill and #4 Jet Mill (EU 037) and the #1 Jet Mill Crude Bin (EU 008) (ARM 17.8.752 and ARM 17.8.340).
7. BMI shall not cause or authorize to be discharged into the atmosphere particulate emissions exceeding 0.014 gr/dscf from the Talc Compaction System (TCS) (ARM 17.8.749 and ARM 17.8.340).
8. BMI shall not cause or authorize to be discharged into the atmosphere particulate emissions exceeding 9.3 pounds per hour (lb/hr) from the #3 Jet Mill (EU 036) (ARM 17.8.752).
9. BMI shall not cause or authorize to be discharged into the atmosphere from the Beneficiation Dryer (EU 048) any stack emissions that:
 - a. Contain PM in excess of 0.057 grams/ dry standard cubic meter (g/dscm) (ARM 17.8.752);
 - b. Exhibit greater than 10% opacity (ARM 17.8.752); or
 - c. Violate the New Source Performance Standards (NSPS) contained in 40 Code of Federal Regulations (CFR) 60, Subpart UUU (ARM 17.8.340).
10. BMI shall not cause or authorize to be discharged into the atmosphere from the Pelletizer Dryer System (EU 059) any stack emissions that contain PM in excess of 0.057 g/dscm or exhibit greater than 10% opacity as required in 40 CFR 60, Subpart UUU (ARM 17.8.340).

11. BMI shall not cause or authorize and stack PM emissions in excess of 0.05 g/dscm (0.02 gr/dscf) or emissions that exhibit an opacity greater than 7% averaged over 6 consecutive minutes from any crusher, grinding mill, screening operation, bucket elevator, transfer point on belt conveyor, bagging operation, storage bin, enclosed truck or rail car loading station constructed, reconstructed or modified after April 22, 2008 (ARM 17.8.340 and 40 CFR 60, Subpart OOO).
12. BMI shall not cause or authorize any fugitive emissions that exhibit greater than 10% opacity from any grinding mills, screening operations, bucket elevators, transfer points on belt conveyors, bagging operations, storage bins, enclosed truck or railcar loading stations or from any other affected facility constructed, reconstructed or modified after August 31, 1983, but before April 22, 2008, (pursuant to 40 CFR 60, Subpart OOO) including, but not limited to, the emission sources contained in Table 2

Table 2	
Title V Operating Permit (#OP1995) EU Identification	Equipment/System Description
EU 010	Beneficiation Crude Silos, Bucket Elevator, and Nuisance
EU 012	Pellet Nuisance – East
EU 013	Pellet Nuisance – West
EU 014	#3 Jet Stream Classifier
EU 015	Talc Compaction System (TCS)
EU 016	#4 Jet Stream Classifier Feed Bin
EU 020	Packout Packers, East and West
EU 030	Silo #7
EU 031	Silo #8
EU 037	#1 Jet Mill and #4 Jet Mill
EU 052	Silo #9
EU 053	Silo #10
EU 054	#1 ACM Mill
EU 055	East Coated Talc Feed Bin – Silo #11
EU 056	West Coated Talc Feed Bin – Silo #12
EU 057	Coated Talc Small Bag Packer Bin
EU 058	Coated Talc Semi-bulk Packer Bin
EU 060	Pellet Loadout Conveyor
EU 061	Pelletizer South Feed Bin
EU 062	Pelletizer North Feed Bin
EU 063	#1 Semi-bulk Feed Bin
EU 064	#2 Semi-bulk Feed Bin
EU 065	K-tron Feed Bin
EU 077	West Coated Talc Product Bin
EU 078	East Coated Talc Product Bin
EU 082	Roller Mill Rejects (Throwouts) Silo
EU 083	CPS Vacuum Packer
EU 084	CPS Silo

Table 2	
Title V Operating Permit (#OP1995) EU Identification	Equipment/System Description
EU 085	Silo #15
EU 087	Silo #16
EU 088	ACM #2 Mill
EU 092	#5 Jet Mill
EU 093	Silo #17
N/A	All emission points associated with the talc beneficiation circuit except the dryer

13. BMI shall not cause or authorize to be discharged into the atmosphere from the CPS Vacuum Packer (EU 083) or the CPS Silo (EU 084) any stack emissions that exhibit greater than 7% opacity as required in 40 CFR Part 60.672(f) (ARM 17.8.340 and 40 CFR 60, Subpart OOO).
14. BMI shall comply with all applicable standards and limitations and the reporting, recordkeeping, and notification requirements contained in 40 CFR 60, Subparts OOO and UUU, unless otherwise specified in this permit (ARM 17.8.340 and 40 CFR Part 60).
15. BMI shall not operate the #1 Jet Mill and the #4 Jet Mill simultaneously (ARM 17.8.749).
16. The combined maximum capacity of the Wash Plant Jaw Crusher #2 (EU 097) and Wash Plant Cone Crusher (EU 098) shall not exceed 110 tph (ARM 17.8.749).

C. Testing Requirements

1. All compliance source tests shall be conducted in accordance with the Montana Source Test Protocol and Procedures Manual (ARM 17.8.106).
2. The Department may require further testing and/or opacity observations (ARM 17.8.105).

D. Emission Monitoring Requirements

1. Opacity is determined under 40 CFR Part 60, Appendix A, Method 9, or by an in-stack transmissometer complying with 40 CFR Part 60, Appendix B, Performance Specification 1. However, BMI shall conduct weekly visual surveys of visible emissions on each emission source listed in Section I.A of the Permit Analysis (Permitted Equipment). Conducting a visual survey does not relieve BMI of any liability for a violation determined in compliance with Method 9.

The person conducting the visual survey does not have to be an EPA Method 9 qualified observer. However, the individual must be familiar with the procedures of EPA Method 9, including the proper location from which

to observe visible emissions. Whether a Method 9 test or visual survey is conducted, if a source of excessive fugitive emissions is identified, BMI shall contain or minimize the source of emissions (e.g., sweep up the material, cover the material, or use water or chemical treatment to minimize the fugitive emissions), unless cold weather would make this activity result in hazardous conditions. If water is used to control fugitive dust emissions, BMI shall take precautions to avoid creating a water quality problem from surface water runoff.

The visual surveys shall be logged and maintained on site. The log shall include the results of the survey, any corrective action that was taken, and the observer's initials (ARM 17.8.749).

2. The test records compiled in accordance with Section II.D.1 of the permit shall be maintained by BMI as a permanent business record for at least 5 years and shall be available at the plant site for inspection by the duly authorized representative of the Department. Summary reports of the surveys will be submitted to the Department quarterly within 45 days of the end of the calendar quarter. The name or names of the person or persons who conducted the surveys shall be included in the report (ARM 17.8.749).

E. Operational Reporting Requirements

1. BMI shall supply the Department with annual production information for all emission points, as required by the Department in the annual emission inventory request. The request will include, but is not limited to, all sources of emissions identified in the emission inventory contained in the permit analysis.

Production information shall be gathered on a calendar-year basis and submitted to the Department by the date required in the emission inventory request. Information shall be in the units required by the Department. This information may be used to calculate operating fees, based on actual emissions from the facility, and/or to verify compliance with permit limitations (ARM 17.8.505).

2. BMI shall notify the Department of any construction or improvement project conducted, pursuant to ARM 17.8.745, that would include the ***addition of a new emissions unit***, change in control equipment, stack height, stack diameter, stack flow, stack gas temperature, source location, or fuel specifications, or would result in an increase in source capacity above its permitted operation. The notice must be submitted to the Department, in writing, 10 days prior to startup or use of the proposed de minimis change, or as soon as reasonably practicable in the event of an unanticipated circumstance causing the de minimis change, and must include the information requested in ARM 17.8.745(l)(d) (ARM 17.8.745).

3. All records compiled in accordance with this permit must be maintained by BMI as a permanent business record for at least 5 years following the date of the measurement, must be available at the plant site for inspection by the Department, and must be submitted to the Department upon request (ARM 17.8.749).

F. Notification

BMI shall provide the Department with written notification of the actual start-up date of the optical sorting plant postmarked within 15 days after the actual start-up date (ARM 17.8.749)

Section III: General Conditions

- A. Inspection - BMI shall allow the Department's representatives access to the source at all reasonable times for the purpose of making inspections or surveys, collecting samples, obtaining data, auditing any monitoring equipment, Continuous Emission Monitoring System (CEMS), Continuous Emission Rate Monitory System (CERMS), or observing any monitoring or testing, and otherwise conducting all necessary functions related to this permit.
- B. Waiver - The permit and all the terms, conditions, and matters stated herein shall be deemed accepted if BMI fails to appeal as indicated below.
- C. Compliance with Statutes and Regulations - Nothing in this permit shall be construed as relieving BMI of the responsibility for complying with any applicable federal or Montana statute, rule, or standard, except as specifically provided in ARM 17.8.740, *et seq.* (ARM 17.8.756).
- D. Enforcement - Violations of limitations, conditions and requirements contained herein may constitute grounds for permit revocation, penalties or other enforcement as specified in Section 75-2-401, *et seq.*, MCA.
- E. Appeals – Any person or persons jointly or severally adversely affected by the Department's decision may request, within 15 days after the Department renders its decision, upon affidavit setting forth the grounds therefore, a hearing before the Board of Environmental Review (Board). A hearing shall be held under the provisions of the Montana Administrative Procedures Act. The filing of a request for a hearing does not stay the Department's decision, unless the Board issues a stay upon receipt of a petition and a finding that a stay is appropriate under Section 75-2-211(11)(b), MCA. The issuance of a stay on a permit by the Board postpones the effective date of the Department's decision until conclusion of the hearing and issuance of a final decision by the Board. If a stay is not issued by the Board, the Department's decision on the application is final 16 days after the Department's decision is made.
- F. Permit Inspection - As required by ARM 17.8.755, Inspection of Permit, a copy of the air quality permit shall be made available for inspection by Department personnel at the location of the source.

- G. Permit Fees - Pursuant to Section 75-2-220, MCA, as amended by the 1991 Legislature, failure to pay the annual operation fee by BMI may be grounds for revocation of this permit, as required by that section and rules adopted thereunder by the Board.
- H. Duration of Permit – Construction or installation must begin or contractual obligations entered into that would constitute substantial loss within 3 years of permit issuance and proceed with due diligence until the project is complete or the permit shall expire (ARM 17.8.762).

Montana Air Quality Permit Analysis
Barretts Minerals, Inc.
MAQP #1995-20

I. Introduction/Process Description

Barretts Minerals, Inc. (BMI) owns and operates an existing talc processing plant located approximately 7 miles south of Dillon at the BMI Mill Complex. The legal description of the facility is the East ½ of Section 17, Township 8 South, Range 9 West in Beaverhead County, Montana.

A. Permitted Equipment

The BMI facility includes, but is not limited to, the equipment identified in Table 1.

Table 1				
Title V Emitting Unit (EU) Identification	Source Description	Stack #	Standards of Performance for New Stationary Sources (NSPS) Subpart	Control Equipment ID
EU 001	Boiler	001		None
EU 002	#1 Roller Mill	002		DCO32411
EU 003	#2 Roller Mill	005		DCO32421
EU 004	#3 Roller Mill	004		DCO32431
EU 005	#1 Roller Mill-Nuisance	031		DCO32412
EU 006	#2 Roller Mill-Nuisance	003		DCO32422
EU 007	#1 ACM Feed Bin	006		DCO33312
EU 008	#1 Jet Mill Crude Bin	007	OOO	DCO32611
EU 009	#2 Jet Mill Crude Bin	008	OOO	DCO32623
EU 010	Beneficiation Crude Silos, Bucket Elevator, and Nuisance	042	OOO	DCO20127
EU 012	Pellet Nuisance-East	010	OOO	DCO32901
EU 013	Pellet Nuisance-West	010	OOO	DCO32902
EU 014	#3 Jet Stream Classifier	013	OOO	DCO33031
EU 015	Talc Compaction System (TCS)	015	OOO	
EU 016	#4 Jet Stream Classifier Feed Bin	015	OOO	DCO32012
EU 017	Bulk Loadout – Spout #1 Bulk Loadout – Spout #2 Bulk Loadout – Spout #3	016		DCO33401
EU 018	#3 Roller Mill Crude Bins	017		DCO32302
EU 020	Packout Packers, East and West	018		DCO33101 DCO33103
EU 022	Pump Stations	019		DCO33403
EU 024	Silo #1	020		DCO32401
EU 025	Silo #2	021		DCO32402

Table 1				
Title V Emitting Unit (EU) Identification	Source Description	Stack #	Standards of Performance for New Stationary Sources (NSPS) Subpart	Control Equipment ID
EU 026	Silo #3	022		DCO32403
EU 027	Silo #4	023		DCO32404
EU 028	Silo #5	024		DCO32405
EU 029	Silo #6	025		DCO32406
EU 030	Silo #7	026	OOO	DCO32501
EU 031	Silo #8	027	OOO	DCO32502
EU 034	#2 Jet Mill Pack Bins	032		DCO32622
EU 035	#2 Jet Mill	033		DCO32621
EU 036	#3 Jet Mill	034		DCO32631
EU 037	#1 Jet Mill and #4 Jet Mill	035	OOO (#4 only)	DCO32613
EU 039	#3 and #4 Hammermills	037		DCO32541
EU 041	Packout Reclaim	038		DCO33102
EU 042	#1 and #2 Jet Stream Classifiers	039		DCO33011
EU 043	#1 and #2 Hammermill	040		DCO32511
EU 044	Centralized Reclaim	041		DCO32521
EU 045	Dry Mill Input (Cone Crusher)	045		DCO32301
EU 047	Calcliner	043		None
EU 048	Beneficiation Dryer	044	UUU	DCO20611
EU 050	Jet Mill Reclaim System	046		DCO32601
EU 052	Silo #9	020	OOO	DCO32503
EU 053	Silo #10	020	OOO	DCO32504
EU 054	#1 ACM Mill	048	OOO	DCO33311
EU 055	East Coated Talc Feed Bin Silo #11	049	OOO	DCO32811
EU 056	West Coated Talc Feed Bin – Silo #12	050		DCO32812
EU 057	Coated Talc Small Bag Packer Bin	055	OOO	DCO32815
EU 058	Coated Talc Semi-bulk Packer Bin	055	OOO	DCO32816
EU 059	Pelletizer Dryer System	N/A	UUU	DCO32905
EU 060	Pellet Loadout Conveyor	N/A	OOO	DCO32906
EU 061	Pelletizer South Feed Bin	N/A	OOO	DCO32903
EU 062	Pelletizer North Feed Bin	N/A	OOO	DCO32904
EU 063	#1 Semi-bulk Feed Bin	N/A	OOO	DCO33402
EU 064	#2 Semi-bulk Feed Bin	N/A	OOO	DCO33421
EU 065	K-tron Feed Bin	051	OOO	DCO32817
EU 067	Wash Plant Jaw Crusher	N/A		Best Operating

Table 1				
Title V Emitting Unit (EU) Identification	Source Description	Stack #	Standards of Performance for New Stationary Sources (NSPS) Subpart	Control Equipment ID
				Practices (BOP)
EU 068	Bulk Crude Conveyor	N/A		BOP
EU 069	Ore Stockpile	N/A		BOP
EU 070	Rejects Stockpile	N/A		BOP
EU 071	Fines Stockpile	N/A		BOP
EU 072	Auxiliary Equipment	N/A		BOP
EU 073	Haul and Access Roads	N/A		BOP
EU 074	Disturbed Acres	N/A		BOP
EU 075	Tailings Handling	N/A		BOP
EU 076	Conveyor Transfer Points	N/A		BOP
EU 077	West Coated Talc Product Bin	053	OOO	DCO32814
EU 078	East Coated Talc Product Bin	054	OOO	DCO32813
EU 079	ACM Blending Crude Bin	N/A	OOO	DCO33313
EU 080	Beneficiation Product Silos	009	OOO	DCO20620
EU 082	Roller Mill Rejects (Throwouts) Silo	008	OOO	DCO32407
EU 083	CPS Vacuum Packer	N/A	OOO	DCO33901
EU 084	CPS Silo	N/A	OOO	DCO33902
EU 085	Silo #15	N/A	OOO	DCO32820
EU 086	Centralized Vacuum System	N/A	OOO	DCO33903
EU 087	Silo #16		OOO	DCO32516
EU 088	ACM #2 Mill	STK325-22	OOO	DCO32522
EU 089	ACM Surface Vacuum	008		DCO32407
EU 090	Sterlizer System Natural Gas Heater			none
EU 091	Sterlizer System Feed Bin			Baghouse
EU 092	#5 Jet Mill	STK326-32	OOO	DCO32632
EU 093	Silo #17	STK328-22	OOO	DCO32822
EU 094	#3 ACM		OOO	DC 348-01
EU 095	#3 ACM Wet Crude Bin		OOO	DC 348-11
EU 096	#3 ACM Dry Crude Bin		OOO	DC 348 21
EU 097	Wash Plant Jaw Crusher #2		OOO	
EU 098	Wash Plant Cone Crusher		OOO	

Table 1				
Title V Emitting Unit (EU) Identification	Source Description	Stack #	Standards of Performance for New Stationary Sources (NSPS) Subpart	Control Equipment ID
EU 099	Optical Sorting Wash Plant (Specifically, Wash Plant Dry Screen, Optical Sorter #1, Optical Sorter #2 within plant)		OOO	BH56001

B. Source Description

Talc ore is received at the plant where the ore is crushed, washed, and stockpiled. The material is then transferred into the plant where the material is milled to obtain different size distributions for different products. The mill ships approximately 65% of the talc by truck and approximately 35% by rail. Approximately 20% of the talc is shipped in bulk (by rail) and the remaining material is packaged in bulk bags and other bags of various dimensions.

C. Permit History

The Department of Environmental Quality – Air Resources Management Bureau (Department) issued the original Montana air quality permit (MAQP) to Pfizer, Inc. (Pfizer) on June 30, 1970. **MAQP #179-082470** was issued for the #1 Jet Mill.

The Department issued **MAQP #561-061273** on May 16, 1973, for Hammermills #3 and #4, the Bauer Mill, and the Bagging Plant.

MAQP #574-071073 was issued June 16, 1973, for the secondary cone crusher and the #1 Jet Mill.

MAQP #638-101073 was issued October 5, 1973, for the #3 (66") Roller Mill, #2 Aljet Mill, and Bagging Plant.

MAQP #690-022674 was issued February 25, 1974, for the rotary kiln.

MAQP #1061 was issued April 28, 1977, for the #1 (50") Roller Mill.

MAQP #1081 was issued July 12, 1977, for the central vacuum system.

MAQP #1090 was issued July 12, 1977, for the #2 (50") Roller Mill.

MAQP #1186 was issued February 22, 1978, for the JS 30 Jet Stream Classifier and related equipment.

MAQP #1493 was issued June 27, 1980, for a #4 Raymond Roller Mill, #3 Jet Mill, and the Packaging equipment. This equipment was never installed.

MAQP #1576 was issued April 20, 1981, for a Jet Mill Nuisance Dust Collector. This equipment was never installed.

MAQP #1583 was issued April 22, 1981. This permit was an Operating Permit to cover the following permits: MAQP #1576; MAQP #1186; MAQP #1061; MAQP #1081; MAQP #574-071073; MAQP #561-061273; MAQP #638-101073; and MAQP #1090.

MAQP #1618 was issued August 18, 1981, for the #1 Aljet Mill.

MAQP #1995 was issued February 15, 1985, for the talc densifier.

The Large Bag Filling system was installed on January 8, 1986. No permit was issued for this construction.

MAQP #1995A was issued May 8, 1990, for the beneficiation plant. MAQP #1995A replaced all previously issued permits.

MAQP #1995-02 was issued June 3, 1992, for the addition of the JS 80 Classifier, a Classifier Feed Bin, Pack Bin, Packer, and related equipment. This equipment was added to the plant to allow the company to market a new product. MAQP #1995-02 replaced MAQP #1995A.

MAQP #1995-03 was issued December 7, 1992, for a Semi-bulk packaging system. This permit also changed the name on the MAQP from Pfizer to BMI, as requested by the company. MAQP #1995-03 replaced MAQP #1995-02.

MAQP #1995-04 was issued November 18, 1993, for the installation and operation of Silo #7, Silo #8, Silo #9, Silo #10, the Bulk Loadout System, HiRoller Enclosed Belt conveyor, and Packer (PKR33103). All of these sources, except the Bulk Loadout system, are subject to Standards of Performance for new Stationary Sources (NSPS) 40 Code of Federal Regulations (CFR) Part 60, Subpart OOO requirements. Silo #7, Silo #8, and the Bulk Loadout System were installed at the plant in 1990 without a permit. After this was discovered, BMI applied to have the equipment added to the permit. Silo #9 and Silo #10 were installed in May of 1994. The HiRoller Enclosed Belt conveyor was installed to replace the current screw conveyors used to feed the beneficiation plant. The Packer (PKR33103) was planned to increase the bag accuracy by increasing the fill time and was added to the existing packout area. The conveyor and packer were controlled by existing baghouses. The permit also included some clarifications and the addition of BMI' numbering system for identifying equipment. The clarifications associated with the permit included a detailed identification of the sources at the plant that are subject to NSPS requirements. The two NSPS subparts that have been identified as affecting this facility are 40 CFR 60, Subpart OOO, and 40 CFR 60, Subpart UUU. MAQP #1995-04 replaced MAQP #1995-03.

MAQP #1995-05 was issued on January 29, 1995, for the installation and operation of the following equipment: Coated Talc #1 Feed Bin; Coated Talc #2 Feed Bin; K-tron Feed Bin; Coated Talc Recycle System; Coated Talc #1 Product Silo; Coated Talc #2 Product Silo; Coated Talc Small Bag Packer; Coated Talc Semi-Bulk Packer; ACM Mill; and the associated control equipment. With the addition of this

equipment, coated talc production increased from 1,000 pounds per hour (lb/hr) to 4,000 lb/hr. The ACM Mill allowed the facility to increase the production and sizing capabilities of milled talc. The addition of the ACM Mill also allowed BMI to change the use of the existing mills to allow for a better flow of sized materials. MAQP #1995-05 replaced MAQP #1995-04.

MAQP #1995-06 was issued December 17, 1995, for the installation and operation of a talc pelletizer system including a dryer (natural gas-fired, vibratory), loadout conveyor and loadout system, and the associated control equipment. Two existing bins, which had not previously been permitted, were also included (Compactor Classifier Bin and Compactor Jet Mill Feed Bin). As part of this permit action, the requirement for daily opacity observations was reduced to weekly opacity observations. MAQP #1995-06 replaced MAQP #1995-05.

MAQP #1995-07 was issued April 29, 1996, for the relocation of semi-bulk packaging equipment and the addition of the #1 and #2 Semi-bulk Feed Bins and collectors. MAQP #1995-07 replaced MAQP #1995-06.

MAQP #1995-08 was issued on July 24, 1999, requesting an alternative to the required weekly visible emission observations and the delta pressure data from baghouse sources. The modification required regular inspection and preventive maintenance similar to what would be required at the facility through the Title V Permit. In addition, the equipment list was updated with the correct source terminology. The calciner was removed from the list of equipment requiring a baghouse (Section II.A.3 of Permit #1995-07) because the calciner was incorrectly incorporated into Section II.A.3 in Permit #1995-04.

The beneficiation dryer's particulate limit and opacity limitation listed in Section II.B.5 of MAQP #1995-07 were corrected. The corrected values were incorporated into Section II.B.8 of the permit.

The new silo and the new baghouse that were constructed according to the provisions of the Administrative Rules of Montana (ARM) 17.8.705(1)(r) were incorporated into the equipment list in the Permit Analysis. The project was completed to improve the Roller Mill rejects collection and recycling system (Throw-puts alley). The existing DC032407 Mikro-Pulsaire Model 16S-8-20 baghouse was replaced with a Mikro-Pulsaire Model 36S-8-20 baghouse. Further, the testing requirements and the rule references were updated. MAQP #1995-08 replaced MAQP #1995-07.

On October 18, 2000, BMI was issued **MAQP #1995-09**, for the addition of a 30-ton storage silo (CPS Storage Silo) and two associated baghouses (CPS Silo Baghouse and CPS Vacuum Packer Baghouse) to the existing centralized packaging system. The CPS Silo Baghouse controls emissions resulting from material transfer to the silo and the CPS Silo Reclaim Baghouse captures emissions from the packaging reclaim system. MAQP #1995-09 replaced MAQP #1995-08.

On July 6, 2001, BMI was issued **MAQP #1995-10**, for the installation and operation of the dust collector baghouse on top of Silo #15. The baghouse was added to the MAQP according to the provisions of ARM 17.8.705(1)(r). In addition, the equipment identification nomenclature was updated to match the nomenclature used

in BMI Title V Operating Permit #OP1995-00. However, Barrett's request to modify the testing schedules of several pieces of equipment was not incorporated into MAQP #1995-10 because all of the testing requirements in Section II.C of the MAQP include a specific schedule and the statement "or another testing schedule as may be approved by the Department." The Department determined that any testing schedule change requests would be evaluated on a case-by-case basis. MAQP #1995-10 replaced MAQP #1995-09.

On October 16, 2003, **MAQP #1995-11** was issued to BMI. This permit action was an Administrative Amendment to update the emitting unit description and/or titles; remove decommissioned equipment from the permit; add equipment to the permit that was incorporated according to the provisions of ARM 17.8.745(1); separate multiple emitting units that are referenced as one emitting unit; combine multiple emitting units that vent through the same baghouse (process equipment) into one single unit; revise the testing schedule of controlled point sources; and add a new jet mill (#4 Jet Mill) to the facility. MAQP #1995-11 replaced MAQP #1995-10.

On February 6, 2004, the Department received a de minimis notification letter from BMI. BMI notified the Department that they would be replacing the existing fan in the baghouse (DC032407) for the Roller Mill Rejects (Throwouts) Silo (EU082). The change increased the airflow capacity of the baghouse to 2,973 actual cubic feet per minute (acfm), which represents a 1.404 tons per year (tpy) increase in the facility's Potential to Emit (PTE). The change was accomplished according to the provisions of ARM 17.8.745 and the emission inventory contained in the Permit Analysis was adjusted to account for the change in the facility's PTE. On May 21, 2004, **MAQP #1995-12** replaced MAQP #1995-11.

On June 4, 2004, the Department received a de minimis notification letter from BMI. BMI notified the Department that they would be replacing the existing baghouse (DC032612) for the #1 Jet Mill and #4 Jet Mill (EU 037) with a smaller baghouse (DC032613). The new baghouse was designed to achieve a nominal air flow rate of 5,000 dry standard cubic feet per minute (dscfm) and a maximum particulate matter (PM) and particulate matter with an aerodynamic diameter of 10 microns or less (PM₁₀) emission rate of 0.020 grains per dry standard cubic foot (gr/dscf). The new baghouse had a PTE for PM and PM₁₀ of 3.754 tpy. In addition, BMI notified the Department of the addition of a new silo (Silo #16 (EU 087)) and associated baghouse (DC032516) to be installed at the facility. The baghouse was designed to achieve a nominal air flow rate of 3,200 dscfm and a maximum PM and PM₁₀ emission rate of 0.020 gr/dscf. The new baghouse had the potential to emit PM and PM₁₀ at a rate of 2.405 tpy.

Further, BMI requested that the Department remove the #1 Jet Mill Pack Bin (lift fan) (EU 038) from the permit because the equipment had been removed from operations. The current permit action incorporated BMI's requests according to the provisions of ARM 17.8.745(1). Furthermore, minor errors in the Emission Inventory were corrected. **MAQP #1995-13** replaced MAQP #1995-12.

On March 18, 2005, MAQP #1995-14 was issued for the addition of a new talc mill (ACM #2 Mill) and associated fabric filter baghouse (DC032522). The baghouse was designed to achieve a nominal air flow rate of 12,000 actual cubic feet per minute (acfm) (8,845 dscfm) and a maximum PM and PM₁₀ emission rate of 0.020

gr/dscf. The baghouse has a PTE for PM and PM₁₀ of 6.64 tpy. BMI also modified the Roller Mill Rejects (Throwouts) Silo (EU 082) baghouse (DC032407) to increase the nominal airflow rate from 2307 acfm (1790 dscfm) to 2900 acfm (2250 dscfm). The maximum PM and PM₁₀ emission rate of the baghouse remained 0.020 gr/dscf. The modified baghouse PTE PM and PM₁₀ is 1.689 tpy. Further, BMI added a new vacuum system (ACM Surface Vacuum). BMI reported a PTE of 0.00 tpy for the vacuum system because it would vent inside EU 082.

The permit action incorporated BMI requests into the permit according to the provisions of ARM 17.8.745(1). In addition, conditions were added to the permit according to the provisions of ARM 17.8.745(2) to require the ACM #2 Mill be vented to a baghouse and require the ACM Surface Vacuum be vented inside EU 082. Furthermore, NSPS conditions were applied to the ACM #2 Mill. **MAQP #1995-14** replaced MAQP #1995-13.

On October 26, 2005, May 10, 2005, and May 1, 2006; the Department received de minimis notification letters from BMI. BMI notified the Department of the replacement of the Roller Mill Rejects (Throwouts) Silo baghouse, the addition of a heat sterilization system, and the addition of a new talc mill designated as the #5 Jet Mill, respectively.

BMI replaced the baghouse on the Roller Mill Rejects (Throwouts) Silo to enhance dust collection capabilities. The replacement resulted in an increase in air flow capacity from 2970 acfm to 4000 acfm with an increase in emissions of 0.623 tpy. The addition of the heat sterilization system was to give the facility the ability to treat talc for specialty markets. The addition of the new #5 Jet Mill will increase emissions 2.07 tpy, have a design capacity of 4914 acfm and will not require expansion of the boiler capacity. The emission inventory was updated to reflect the additional emissions. On August 4, 2006, **MAQP #1995-15** replaced MAQP #1995-14.

On September 22, 2006, the Department received a de minimis notification letter in accordance with ARM 17.8.745(1)(b) from BMI. BMI notified the Department of the addition of a new silo (Silo #17) and associated fabric filter baghouse (DCO-328-22). The baghouse was designed to achieve a nominal air flow rate of 1,200 acfm (978 dscfm) and a maximum PM and PM₁₀ emission rate of 0.020 gr/dscf. The baghouse has a PTE for PM and PM₁₀ of 0.736 tpy. The current permit action added Silo #17 to the Permit.

In addition, two jet mills that were previously added to the permit (#4 Jet Mill (EU 037) and #5 Jet Mill (EU 092)) according to the provisions of ARM 17.8.745(1) were identified as being subject to NSPS, 40 CFR 60, Subpart OOO. Therefore, NSPS conditions were applied to the #4 Jet Mill and #5 Jet Mill. Further, a condition was added to the permit according to the provisions of ARM 17.8.745(2) that requires EU 092 be vented to a baghouse. **MAQP #1995-16** replaced MAQP #1995-15.

On January 20, 2009, the Department received a de minimis notification letter in accordance with ARM 17.8.745(1)(b) from BMI. The de minimis request added a baghouse to the existing #1 Jet Mill Crude Bin to prevent cross contamination with the #2 Jet Mill Crude Bin and improve both baghouse capture efficiencies. BMI intended to also use this baghouse to capture and reclaim material used in the talc

manufacturing process. Previously, the #1 and #2 Jet Mill Crude Bins shared a baghouse. The #1 Jet Mill Crude Bin baghouse has a nominal fan capacity of 1000 acfm and a guaranteed particulate control efficiency of 0.02 gr/dscf. **MAQP #1995-17** replaced MAQP #1995-16.

On July 21, 2014, the Department received a de minimis notification letter in accordance with ARM 17.8.745(1)(b) from BMI requesting to install a new Talc Compaction System (TCS). The TCS project is designed to take finely ground talc and densify it through a roll compaction system. The system included a feed system, compaction unit, transportation system and packaging equipment. The system included:

1. Feed bin and associated feed piping,
2. Compaction unit, screen and hopper,
3. Bulk loadout bin with conveyors to convey to the existing pelletized bulk conveyor,
4. Miscellaneous conveyors and bucket elevators,
5. Semi-bulk packaging system with a feed bin,
6. 50 lb packaging system with a feed bin,
7. Fabric Filter Reclaim System (FFRS).

The TCS utilizes an existing fabric filter reclaim system (FFRS) to capture air-entrained talc particles and return them to the process. The FFRS captures and recovers fugitive product and thereby reduces atmospheric particulate emissions throughout the entire TCS. BMI planned to use the existing FFRS formerly assigned to the #4 Jet Stream Classifier Rotor (EU015). EU015 and the associated baghouse had been idle for several years and BMI had not planned to reactivate the system. As such, BMI requested that the Department remove EU015 from MAQP #1995-17.

The permit action modified the permit to include the requested de minimis changes. **MAQP #1995-18** replaced MAQP #1995-17.

D. Current Permit Action

On May 17, 2018, BMI submitted to the Department of Environmental Quality (Department) an application to modify MAQP #1995-18 to remove the existing wash plant (EU 032) and replace it with an optical sorting wash plant (EU 099). In addition, BMI requested that a new wash plant jaw crusher (EU 097) and wash plant cone crusher (EU 098) be added. The existing wash plant jaw crusher (EU 067) will be removed from normal operations but will be retained as backup equipment.

The purpose of the replacement is to improve efficiency and reliability and to add product grade separation capability. No production throughput rates upstream or downstream will change because of this project. The replacement wash plant will utilize existing stockpiles for fines, product, and off-specification material. The product pile will be split into two separate color grades.

On June 14, 2018, Barretts sent a request to the Department to withdraw the May 17, 2018 application (MAQP #1995-19) to modify MAQP #1995-18. In its place, Barretts provided notice of a de minimis change to the facility in accordance with ARM 17.8.745. This application was incremented to MAQP #1995-20. Having

reviewed the initial emissions estimates, Barretts identified an overly conservative assumption that did not accurately represent actual operations. The requested project was initially evaluated as requiring a permit modification assuming the baghouse would be required at its full capacity to control particulate emissions. However, the baghouse is included in the project to limit dust accumulation on surfaces within the sorter building, which will house the dry screen and sorters. Emissions from these units are expected to be minimal as the screen and sorters will be enclosed and located inside a building. Further, the optical sorters only handle wetted ore from which all fine material has been removed and sized between ¾” and 2”. Considering these design factors, potential to emit was recalculated for the equipment inside the sorter building. Particulate emissions from the sorter building are less than one ton per year.

The June 14th document did not include PM emission estimates for the revised uncontrolled emission analysis. On June 19th, Barretts submitted an analysis that used the AP-42, Chapter 11.19.2 tertiary crushing PM₁₀ emission factor to estimate PM emissions from the proposed primary and secondary crushers since PM emission factors for primary and secondary crushing are not available. Based on feedback from the Department, the more conservative tertiary crushing PM emission factor was used to estimate PM emissions from the proposed primary and secondary crushers and Barretts provided a final process flow diagram indicating final design capabilities at the plant. This information was submitted to the Department on July 20, 2018.

Specifically, the July 20, 2018 notification updated emission calculations to reflect a maximum combined crushing capacity of 110 tons/hr. While the jaw and cone crusher each have a manufacturer rated capacity of 110 tons/hr, their maximum capacity is limited downstream. The final process flow diagram submitted as part of the July 20, 2018 notification clarifies that the optical sorting plant can only process up to 110 tons/hr (55 tons/hr from each crusher), otherwise the system will be overwhelmed and shutdown.

The Department is also updating the permit to include a December 9, 2011 de minimis request for the addition of a new talc mill. The mill and the feed bins included the installation of fabric filter reclaim systems (FFRS). This new equipment allowed BMI to produce medium-grind product while not increasing the facility-wide production capacity. Section I.A Table 1 of the Permit Analysis has been updated to include the new emitting points approved as part of the 2011 de minimis request.

The current permit action modifies the permit to include the new emitting units, the 2011 de minimis change, updates the emissions inventory and updates the permit to reflect current permit language, format, and rule references. **MAQP #1995-20** replaces MAQP #1995-18.

E. Additional Information

Additional information, such as applicable rules and regulations, Best Available Control Technology (BACT)/Reasonably Available Control Technology (RACT) determinations, air quality impacts, and Environmental Assessments, is included in the analysis associated with each change to the permit.

II. Applicable Rules and Regulations

The following are partial explanations of some applicable rules and regulations that apply to the facility. The complete rules are stated in the ARMs and are available, upon request, from the Department. Upon request, the Department will provide references for location of complete copies of all applicable rules and regulations, or copies where appropriate.

A. ARM 17.8, Subchapter 1 - General Provisions, including, but not limited to:

1. ARM 17.8.101 Definitions. This rule includes a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.
2. ARM 17.8.105 Testing Requirements. Any person or persons responsible for the emission of any air contaminant into the outdoor atmosphere shall, upon written request of the Department, provide the facilities and necessary equipment (including instruments and sensing devices) and shall conduct tests (emission or ambient) for such periods of time as may be necessary using methods approved by the Department.
3. ARM 17.8.106 Source Testing Protocol. The requirements of this rule apply to any emission source testing conducted by the Department, any source, or other entity as required by any rule in this chapter, or any permit or order issued pursuant to this chapter, or the provisions of the Clean Air Act of Montana, 75-2-101, et seq., Montana Code Annotated (MCA).

BMI shall comply with the requirements contained in the Montana Source Test Protocol and Procedures Manual, including, but not limited to using the proper test methods and supplying the required reports. A copy of the Montana Source Test Protocol and Procedures Manual is available from the Department upon request.

4. ARM 17.8.110 Malfunctions. (2) The Department must be notified promptly by telephone whenever a malfunction occurs that can be expected to create emissions in excess of any applicable emission limitation, or to continue for a period greater than 4 hours.
5. ARM 17.8.111 Circumvention. (1) No person shall cause or permit the installation or use of any device or any means that, without resulting in reduction in the total amount of air contaminant emitted, conceals or dilutes an emission of air contaminant that would otherwise violate an air pollution control regulation. (2) No equipment that may produce emissions shall be operated or maintained in such a manner as to create a public nuisance.

B. ARM 17.8, Subchapter 2 - Ambient Air Quality, including, but not limited to the following:

1. ARM 17.8.210 Ambient Air Quality Standards for Sulfur Dioxide
2. ARM 17.8.211 Ambient Air Quality Standards for Nitrogen Dioxide
3. ARM 17.8.212 Ambient Air Quality Standards for Carbon Monoxide
4. ARM 17.8.213 Ambient Air Quality Standard for Ozone
5. ARM 17.8.214 Ambient Air Quality Standard for Hydrogen Sulfide

6. ARM 17.8.220 Ambient Air Quality Standard for Settled Particulate Matter
7. ARM 17.8.221 Ambient Air Quality Standard for Visibility
8. ARM 17.8.222 Ambient Air Quality Standard for Lead
9. ARM 17.8.223 Ambient Air Quality Standard for PM₁₀

BMI must maintain compliance with the applicable ambient air quality standards.

C. ARM 17.8, Subchapter 3 - Emission Standards, including, but not limited to:

1. ARM 17.8.304 Visible Air Contaminants. (1) This rule requires that no person may cause or authorize emissions to be discharged into the outdoor atmosphere from any source installed on or before November 23, 1968, that exhibit an opacity of 40% or greater averaged over 6 consecutive minutes. (2) This rule requires that no person may cause or authorize emissions to be discharged into the outdoor atmosphere from any source installed after November 23, 1968, that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes.
2. ARM 17.8.308 Particulate Matter, Airborne. (1) This rule requires an opacity limitation of less than 20% for all fugitive emission sources and that reasonable precautions be taken to control emissions of airborne particulate matter. (2) Under this rule, BMI shall not cause or authorize the use of any street, road, or parking lot without taking reasonable precautions to control emissions of airborne particulate matter.
3. ARM 17.8.309 Particulate Matter, Fuel Burning Equipment. This rule requires that no person shall cause, allow, or permit to be discharged into the atmosphere PM caused by the combustion of fuel in excess of the amount determined by this rule.
4. ARM 17.8.310 Particulate Matter, Industrial Process. This rule requires that no person shall cause, allow, or permit to be discharged into the atmosphere particulate matter in excess of the amount set forth in this rule.
5. ARM 17.8.322 Sulfur Oxide Emissions--Sulfur in Fuel. Commencing July 1, 1971, no person shall burn any gaseous fuel containing sulfur compounds in excess of 50 grains per 100 cubic feet of gaseous fuel, calculated as hydrogen sulfide at standard conditions.
6. ARM 17.8.324 Hydrocarbon Emissions--Petroleum Products. (3) No person shall load or permit the loading of gasoline into any stationary tank with a capacity of 250 gallons or more from any tank truck or trailer, except through a permanent submerged fill pipe, unless such tank is equipped with a vapor loss control device as described in (1) of this rule.
7. ARM 17.8.340 Standard of Performance for New Stationary Sources. This rule incorporates, by reference, 40 CFR Part 60, NSPS. This facility is considered an NSPS-affected facility under 40 CFR 60 and is subject to the requirements of the following subparts.

- a. 40 CFR 60, Subpart A – General Provisions apply to all equipment or facilities subject to an NSPS Subpart as listed below:
- b. 40 CFR 60, Subpart OOO – Standards of Performance for Nonmetallic Mineral Processing Plants. This subpart requires an opacity limitation of 10% on process fugitive emissions, an opacity limitation of 7% on stack emissions, and a baghouse stack emission limitation of 0.05 g/dscm.
- c. 40 CFR 60, Subpart UUU – Standards of Performance for Calciners and Dryers in Mineral Industries. Applicable requirements in this subpart include a stack emission limitation of 0.057 g/dscm and an opacity limitation of 10%.

With respect to the dryer, the Department determined that Subpart UUU is applicable. Under Section 60.734, paragraph (a) would require a continuous opacity monitor. However, the Department is using the delegated authority authorized in Section 60.737 of Subpart UUU to waive that requirement and require weekly visual surveys in place of a continuous opacity monitor.

D. ARM 17.8, Subchapter 5 - Air Quality Permit Application, Operation and Open Burning Fees, including, but not limited to:

1. ARM 17.8.504 Air Quality Permit Application Fees. This rule requires that an applicant submit an air quality permit application fee concurrent with the submittal of an air quality permit application. A permit application is incomplete until the proper application fee is paid to the Department. A permit fee is not required for the current permit action because the permit action is considered an administrative permit change.
2. ARM 17.8.505 Air Quality Operation Fees. An annual air quality operation fee must, as a condition of continued operation, be submitted to the Department by each source of air contaminants holding an air quality permit (excluding an open burning permit) issued by the Department. The air quality operation fee is based on the actual or estimated actual amount of air pollutants emitted during the previous calendar year.

An air quality operation fee is separate and distinct from an air quality permit application fee. The annual assessment and collection of the air quality operation fee, described above, shall take place on a calendar-year basis. The Department may insert into any final permit issued after the effective date of these rules, such conditions as may be necessary to require the payment of an air quality operation fee on a calendar-year basis, including provisions that prorate the required fee amount.

E. ARM 17.8, Subchapter 7 - Permit, Construction and Operation of Air Contaminant Sources, including, but not limited to:

1. ARM 17.8.740 Definitions. This rule is a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.

2. ARM 17.8.743 Montana Air Quality Permits--When Required. This rule requires a facility to obtain an air quality permit or permit modification if they construct, modify or use any air contaminant sources that have a PTE greater than 25 tpy of any pollutant. BMI has a PTE greater than 25 tpy of PM, PM₁₀, and oxides of nitrogen (NO_x); therefore, an air quality permit is required.
3. ARM 17.8.744 Montana Air Quality Permits--General Exclusions. This rule identifies the activities that are not subject to the Montana Air Quality Permit program.
4. ARM 17.8.745 Montana Air Quality Permits--Exclusion for De Minimis Changes. This rule identifies the de minimis changes at permitted facilities that do not require a permit under the Montana Air Quality Permit Program.
5. ARM 17.8.748 New or Modified Emitting Units--Permit Application Requirements. (1) This rule requires that a Permit Application be submitted prior to installation, modification or use of a source. The current permit action is considered an administrative action and does not require a permit application to be submitted. (7) This rule requires that the applicant notify the public by means of legal publication in a newspaper of general circulation in the area affected by the application for a permit. The current permit action is considered an administrative action and does not require an affidavit of publication.
6. ARM 17.8.749 Conditions for Issuance or Denial of Permit. This rule requires that the permits issued by the Department must authorize the construction and operation of the facility or emitting unit subject to the conditions in the permit and the requirements of this subchapter. This rule also requires that the permit must contain any conditions necessary to assure compliance with the Federal Clean Air Act (FCAA), the Clean Air Act of Montana, and rules adopted under those acts.
7. ARM 17.8.752 Emission Control Requirements. This rule requires a source to install the maximum air pollution control capability that is technically practicable and economically feasible, except that BACT shall be utilized. The required BACT analysis is included in Section III of this Permit Analysis.
8. ARM 17.8.755 Inspection of Permit. This rule requires that air quality permits shall be made available for inspection by the Department at the location of the source.
9. ARM 17.8.756 Compliance with Other Requirements. This rule states that nothing in the permit shall be construed as relieving BMI of the responsibility for complying with any applicable federal or Montana statute, rule, or standard, except as specifically provided in ARM 17.8.740, *et seq.*
10. ARM 17.8.759 Review of Permit Applications. This rule describes the Department's responsibilities for processing permit applications and making permit decisions on those permit applications that do not require the preparation of an Environmental Impact Statement (EIS).

11. ARM 17.8.762 Duration of Permit. An air quality permit shall be valid until revoked or modified, as provided in this subchapter, except that a permit issued prior to construction of a new or altered source may contain a condition providing that the permit will expire unless construction is commenced within the time specified in the permit, which in no event may be less than 1 year after the permit is issued.
12. ARM 17.8.763 Revocation of Permit. An air quality permit may be revoked upon written request of the permittee, or for violations of any requirement of the Clean Air Act of Montana, rules adopted under the Clean Air Act of Montana, the FCAA, rules adopted under the FCAA, or any applicable requirement contained in the Montana State Implementation Plan (SIP).
13. ARM 17.8.764 Administrative Amendment to Permit. An air quality permit may be amended for changes in any applicable rules and standards adopted by the Board of Environmental Review (Board) or changed conditions of operation at a source or stack that do not result in an increase of emissions as a result of those changed conditions. The owner or operator of a facility may not increase the facility's emissions beyond permit limits unless the increase meets the criteria in ARM 17.8.745 for a de minimis change not requiring a permit, or unless the owner or operator applies for and receives another permit in accordance with ARM 17.8.748, ARM 17.8.749, ARM 17.8.752, ARM 17.8.755, and ARM 17.8.756, and with all applicable requirements in ARM Title 17, Chapter 8, Subchapters 8, 9, and 10.
11. ARM 17.8.765 Transfer of Permit. This rule states that an air quality permit may be transferred from one person to another if written notice of Intent to Transfer, including the names of the transferor and the transferee, is sent to the Department.

F. ARM 17.8, Subchapter 8 — Prevention of Significant Deterioration of Air Quality, including, but not limited to:

1. ARM 17.8.801 Definitions. This rule is a list of applicable definitions used in this subchapter.
2. ARM 17.8.818 Review of Major Stationary Sources and Major Modifications—Source Applicability and Exemptions. The requirements contained in ARM 17.8.819 through ARM 17.8.827 shall apply to any major stationary source and any major modification with respect to each pollutant subject to regulation under the FCAA that it would emit, except as this subchapter would otherwise allow.

This facility is not a major stationary source since this facility is not a listed source and the facility's PTE is less than 250 tpy of any pollutant (excluding fugitive emissions).

G. ARM 17.8, Subchapter 12 – Operating Permit Program Applicability, including, but not limited to:

1. ARM 17.8.1201 Definitions. (23) Major Source under Section 7412 of the FCAA is defined as any stationary source having:
 - a. PTE > 100 tpy of any pollutant;
 - b. PTE > 10 tpy of any one hazardous air pollutant (HAP), PTE > 25 tpy of a combination of all HAPs, or lesser quantity as the Department may establish by rule; or
 - c. PTE > 70 tpy of PM₁₀ in a serious PM₁₀ nonattainment area.
2. ARM 17.8.1204 Air Quality Operating Permit Program Applicability. (1) Title V of the FCAA Amendments of 1990 requires all sources, as defined in ARM 17.8.1204(1), obtain a Title V Operating Permit. In reviewing and issuing MAQP #1995-20 for BMI, the following conclusions were made:
 - a. The facility's PTE is greater than 100 tpy for PM and PM₁₀.
 - b. The facility's PTE is less than 10 tpy for a single HAP and less than 25 tpy for all HAPs.
 - c. This source is not located in a serious PM₁₀ nonattainment area.
 - d. This facility is subject to current NSPS (40 CFR 60, Subpart OOO and 40 CFR 60, Subpart UUU).
 - e. This facility is not subject to any current NESHAP standards.
 - f. This source is not a Title IV affected source.
 - g. This source is not a solid waste combustion unit.
 - h. This source is not an EPA designated Title V source.

Based on these facts, the Department determined that BMI is a major source of emissions as defined under Title V. Title V Operating Permit #OP1995-08 was issued final and effective on May 23, 2017.

III. BACT Determination

A BACT determination is required for each new or modified source. BMI shall install on the new or modified source the maximum air pollution control capability which is technically practicable and economically feasible, except that BACT shall be utilized.

The current permit action, in accordance with ARM 17.8.745, is considered an administrative action; therefore, a BACT determination is not required.

IV. Emission Inventory

Table 2 – Emission Inventory (tpy)							
Title V EU ID	Source Description	TSP	PM ₁₀	CO	SO ₂	NO _x	VOC
EU 001	Boiler	0.389	0.389	4.533	0.078	18.130	0.363
EU 002	#1 Roller Mill	3.537	3.537				
EU 003	#2 Roller Mill	3.537	3.537				
EU 004	#3 Roller Mill	7.509	7.509				
EU 005	#1 Roller Mill-Nuisance	3.003	3.003				
EU 006	#2 Roller Mill-Nuisance	3.537	3.537				

Table 2 – Emission Inventory (tpy)							
Title V EU ID	Source Description	TSP	PM ₁₀	CO	SO ₂	NO _x	VOC
EU 007	#1 ACM Feed Bin	0.886	0.886				
EU 008	#1 Jet Mill Crude Bin	0.60	0.60				
EU 009	#2 Jet Mill Crude Bin	0.60	0.60				
EU 010	Beneficiation Crude Silos, Bucket Elevator, and Nuisance	6.007	6.007				
EU 012	Pellet Nuisance-East	3.537	3.537				
EU 013	Pellet Nuisance-West	3.537	3.537				
EU 014	#3 Jet Stream Classifier	1.273	1.273				
EU 015	Talc Compression System	3.14	3.14				
EU 016	#4 Jet Stream Classifier Feed Bin	0.567	0.567				
EU 017	Bulk Loadout – Spout #1 Bulk Loadout – Spout #2 Bulk Loadout – Spout #3	2.403	2.403				
EU 018	#3 Roller Mill Crude Bins	0.886	0.886				
EU 020	Packout Packers, East and West	2.545	2.545				
EU 022	Pump Stations	1.273	1.273				
EU 024	Silo #1	0.008	0.008				
EU 025	Silo #2	0.008	0.008				
EU 026	Silo #3	0.008	0.008				
EU 027	Silo #4	0.008	0.008				
EU 028	Silo #5	0.008	0.008				
EU 029	Silo #6	0.008	0.008				
EU 030	Silo #7	0.008	0.008				
EU 031	Silo #8	0.008	0.008				
EU 034	#2 Jet Mill Pack Bins	2.865	2.865				
EU 035	#2 Jet Mill	9.010	9.010				
EU 036	#3 Jet Mill	6.007	6.007				
EU 037	#1 Jet Mill and/or #4 Jet Mill**	3.754	3.754				
EU 039	#3 and #4 Hammermills	2.865	2.865				
EU 041	Packout Reclaim	3.003	3.003				
EU 042	#1 and #2 Jet Stream Classifiers	3.003	3.003				
EU 043	#1 and #2 Hammermills	2.865	2.865				
EU 044	Centralized Reclaim	2.264	2.264				
EU 045	Dry Mill Input (Cone Crusher)	2.865	2.865				
EU 047	Calciner *	35.00	35.00	0.020	0.001	0.100	0.005
EU 048	Beneficiation Dryer (natural gas)	17.27	17.27	0.508	0.009	2.030	0.041
EU 050	Jet Mill Reclaim System	1.273	1.273				
EU 052	Silo #9	0.008	0.008				
EU 053	Silo #10	0.008	0.008				
EU 054	#1 ACM Mill	9.010	9.010				
EU 055	East Coated Talc Feed Bin – Silo #11	0.886	0.886				
EU 056	West Coated Talc Feed Bin – Silo #12	0.886	0.886				
EU 057	Coated Talc Small Bag Packer Bin	1.502	1.502				
EU 058	Coated Talc Semi-bulk Packer Bin	1.126	1.126				
EU 059	Pelletizer Dryer System	6.457	6.457				
EU 060	Pellet Loadout Conveyor	0.143	0.143				
EU 061	Pelletizer South Feed Bin	1.273	1.273				
EU 062	Pelletizer North Feed Bin	1.273	1.273				
EU 063	#1 Semi-bulk Feed Bin	1.273	1.273				
EU 064	#2 Semi-bulk Feed Bin	1.273	1.273				
EU 065	K-tron Feed Bin	0.886	0.886				
EU 067	Wash Plant Jaw Crusher	32.213	18.039				
EU 068	Bulk Crude Conveyor	0.000	0.000				

Table 2 – Emission Inventory (tpy)							
Title V EU ID	Source Description	TSP	PM ₁₀	CO	SO ₂	NO _x	VOC
EU 069	Ore Stockpile	7.805	2.838				
EU 070	Rejects Stockpile	0.825	0.300				
EU 071	Fines Stockpile	6.765	2.460				
EU 072	Auxiliary Equipment	0.376	0.006	1.920	0.389	4.600	0.421
EU 073	Haul and Access Roads	0.837	0.304				
EU 074	Disturbed Acres	N/A	N/A				
EU 075	Tailings Handling	N/A	N/A				
EU 076	Conveyor Transfer Points	N/A	N/A				
EU 077	West Coated Talc Product Bin	0.886	0.886				
EU 078	East Coated Talc Product Bin	0.886	0.886				
EU 079	ACM Blending Crude Bin	0.886	0.886				
EU 080	Beneficiation Product Silos	1.273	1.273				
EU 082	Roller Mill Rejects (Throwouts) Silo	2.312	2.312				
EU 083	CPS Vacuum Packer	1.352	1.352				
EU 084	CPS Silo	0.008	0.008				
EU 085	Silo #15	1.352	1.352				
EU 086	Centralized Vacuum System	0.263	0.263				
EU 087	Silo #16	2.403	2.403				
EU 088	ACM #2 Mill	6.641	6.641				
EU089	SCM Surface Vacuum***	0.00	0.00				
EU090	Sterilizer System Natural Gas Heater			0.90		1.07	
EU091	Sterilizer System Feed Bin	1.11	1.11				
EU092	#5 Jet Mill	2.07	2.07				
EU093	Silo #17	0.736	0.736				
EU 094	#3 ACM	2.92	2.92				
EU 095	#3 ACM Wet Crude Bin	0.485	0.485				
EU 096	#3 ACM Dry Crude Bin	0.485	0.485				
EU 097	Wash Plant Jaw Crusher #2	1.30	0.58				
EU 098	Wash Plant Cone Crusher	1.30	0.58				
EU 099	Optical Sorting Wash Plant	2.22	0.88				
Total		246.581	218.93	7.881	0.477	25.930	0.830

* TSP & PM₁₀ include Natural Gas

** The #1 Jet Mill and the #4 Jet Mill cannot be operated simultaneously.

*** EU 089 is required to vent inside EU 082

Optical Sorter Wash Plant and Support Units Emissions Inventory

Maximum process rate: 100 metric ton/hr

Maximum process rate: 110 T/hr

Max hours of operation: 8760 hr/yr

Assumed control for inside building: 90%

Assumed control - fully enclosed conveyors outside: 90%

Assumed control - fully enclosed conveyors inside: 98%

Jaw Crusher (EU 097)

Max process rate: 55 T/hr

Max hours of operations: 8760 hr/yr

PM Emissions (uncontrolled) AP-42 Table 11.19.2-2, 8/04

Emission factor: 0.0054 lb PM/ton material

Calculation: 55 T material/hr * 8760 hr/yr * 0.0024 lb PM/T material / 2000 lb PM/T PM = **1.30 T PM/yr**

PM10 Emissions (uncontrolled) AP-42 Table 11.19.2-2, 8/04, Tertiary Crushing note n: "No data available, but emission factors for PM-10 for tertiary crushers can be used as an upper limit for primary or secondary crushing"

Emission factor: 0.0024 lb PM10/ton material

Calculation: $55 \text{ T material/hr} * 8760 \text{ hr/yr} * 0.0024 \text{ lb PM10/T material} / 2000 \text{ lb PM10/T PM10} = 0.58 \text{ T PM10/yr}$

PM2.5 Emissions (uncontrolled) AP-42 Table 11.19.2-2, 8/04, Tertiary Crushing note n: "No data available, but emission factors for PM-10 for tertiary crushers can be used as an upper limit for primary or secondary crushing"

Emission factor: 0.0024 lb PM2.5/ton material

Calculation: $55 \text{ T material/hr} * 8760 \text{ hr/yr} * 0.0024 \text{ lb PM2.5/T material} / 2000 \text{ lb PM2.5/T PM2.5} = 0.58 \text{ T PM2.5/yr}$

Cone Crusher (EU 098)

Max process rate: 55 T/hr (Conversion factors 2000 lb PM/T PM)

Max hours of operations: 8760 hr/yr

PM Emissions (uncontrolled) AP-42 Table 11.19.2-2, 8/04, Tertiary Crushing

Emission factor: 0.0054 lb PM/ton material

Calculation: $55 \text{ T material/hr} * 8760 \text{ hr/yr} * 0.0054 \text{ lb PM/T material} / 2000 \text{ lb PM/T PM} = 1.30 \text{ T PM/yr}$

PM10 Emissions (uncontrolled) AP-42 Table 11.19.2-2, 8/04, Tertiary Crushing note n: "No data available, but emission factors for PM-10 for tertiary crushers can be used as an upper limit for primary or secondary crushing"

Emission factor: 0.0024 lb PM10/ton material

Calculation: $55 \text{ T material/hr} * 8760 \text{ hr/yr} * 0.0024 \text{ lb PM10/T material} / 2000 \text{ lb PM10/T PM10} = 0.58 \text{ T PM10/yr}$

PM2.5 Emissions (uncontrolled) AP-42 Table 11.19.2-2, 8/04, Tertiary Crushing note n: "No data available, but emission factors for PM-10 for tertiary crushers can be used as an upper limit for primary or secondary crushing"

Emission factor: 0.0024 lb PM2.5/ton material

Calculation: $55 \text{ T material/hr} * 8760 \text{ hr/yr} * 0.0024 \text{ lb PM2.5/T material} / 2000 \text{ lb PM2.5/T PM2.5} = 0.58 \text{ T PM2.5/yr}$

EQUIPMENT INSIDE THE SORTER BUILDING

Emissions counted in Optical Wash Plant (EU 099)

Dry Screen

Max process rate: 55 T/hr

Max hours of operations: 8760 hr/yr

PM Emissions (AP-42 Table 11.19.2-2, 8/04, Screening [SCC 3-05-020-02, 03])

Emission factor: 0.025 lb PM/ton material

Calculation: $110 \text{ T material/hr} * 8760 \text{ hr/yr} * 0.025 \text{ lb PM/T material} / 2000 \text{ lb PM/T PM} = 12.07 \text{ T PM/yr} * (1 - 90\%) \text{ control} = 1.207 \text{ T PM/yr}$

PM10 Emissions (AP-42 Table 11.19.2-2, 8/04)

Emission factor: 0.0087 lb PM10/ton material

Calculation: $44.092 \text{ T material/hr} * 8760 \text{ hr/yr} * 0.0087 \text{ lb PM10/T material} / 2000 \text{ lb PM10/T PM10} = 4.20 \text{ T PM10/yr} * (1 - 90\%) \text{ control} = 0.420 \text{ T PM10/yr}$

PM2.5 Emissions (AP-42 Table 11.19.2-2, 8/04)

Emission factor: 0.0087 lb PM2.5/ton material

Calculation: $44.092 \text{ T material/hr} * 8760 \text{ hr/yr} * 0.0087 \text{ lb PM2.5/T material} / 2000 \text{ lb PM2.5/T PM2.5} = 4.20 \text{ T PM2.5/yr} * (1 - 90\%) \text{ control} = 0.420 \text{ T PM2.5/yr}$

Grizzly hopper for reprocessed ore

Max process rate: 44 T/hr

Max hours of operations: 8760 hr/yr

PM Emissions (AP-42 Table 11.19.2-2, 8/04, Unloading - Fragmented Stone [SCC 3-05-020-31])

Emission factor: 0.000016 lb PM/ton material

Calculation: $44.092 \text{ T material/hr} * 8760 \text{ hr/yr} * 0.000016 \text{ lb PM/T material} / 2000 \text{ lb PM/T PM} = 0.0031 \text{ T PM/yr} * (1 - 90\%) \text{ control} = 0.000309 \text{ T PM/yr}$

PM10 Emissions (AP-42 Table 11.19.2-2, 8/04)

Emission factor: 0.000016 lb PM10/ton material

Calculation: $44.092 \text{ T material/hr} * 8760 \text{ hr/yr} * 0.000016 \text{ lb PM10/T material} / 2000 \text{ lb PM10/T PM10} = 0.0031 \text{ T PM10/yr} * (1 - 90\%) \text{ control} = 0.000309 \text{ T PM10/yr}$

PM2.5 Emissions (AP-42 Table 11.19.2-2, 8/04)

Emission factor: 0.000016 lb PM2.5/ton material

Calculation: $44.092 \text{ T material/hr} * 8760 \text{ hr/yr} * 0.000016 \text{ lb PM2.5/T material} / 2000 \text{ lb PM2.5/T PM2.5} = 0.0031 \text{ T PM2.5/yr} * (1 - 90\%) \text{ control} = 0.000309 \text{ T PM2.5/yr}$

Reprocessed ore feeder

Max process rate: 44 T/hr

Max hours of operations: 8760 hr/yr

PM Emissions (AP-42 Table 11.19.2-2, 8/04, Unloading - Fragmented Stone [SCC 3-05-020-31])

Emission factor: 0.000016 lb PM/ton material

Calculation: $44.092 \text{ T material/hr} * 8760 \text{ hr/yr} * 0.000016 \text{ lb PM/T material} / 2000 \text{ lb PM/T PM} = 0.0031 \text{ T PM/yr} * (1 - 90\%) \text{ control} = 0.000309 \text{ T PM/yr}$

PM10 Emissions (AP-42 Table 11.19.2-2, 8/04)

Emission factor: 0.000016 lb PM10/ton material

Calculation: $44.092 \text{ T material/hr} * 8760 \text{ hr/yr} * 0.000016 \text{ lb PM10/T material} / 2000 \text{ lb PM10/T PM10} = 0.0031 \text{ T PM10/yr} * (1 - 90\%) \text{ control} = 0.000309 \text{ T PM10/yr}$

PM2.5 Emissions (AP-42 Table 11.19.2-2, 8/04)

Emission factor: 0.000016 lb PM2.5/ton material

Calculation: $44.092 \text{ T material/hr} * 8760 \text{ hr/yr} * 0.000016 \text{ lb PM2.5/T material} / 2000 \text{ lb PM2.5/T PM2.5} = 0.0031 \text{ T PM2.5/yr} * (1 - 90\%) \text{ control} = 0.000309 \text{ T PM2.5/yr}$

Wet screen

Max process rate: 50 T/hr

Max hours of operations: 8760 hr/yr

PM Emissions (controlled) (AP-42 Table 11.19.2-2, 8/04, Fines Screening (controlled))

Emission factor: 0.0036 lb PM/ton material

Calculation: $49.604 \text{ T material/hr} * 8760 \text{ hr/yr} * 0.0036 \text{ lb PM/T material} / 2000 \text{ lb PM/T PM} = 0.78 \text{ T PM/yr} * (1 - 90\%) \text{ control} = 0.078216 \text{ T PM/yr}$

PM10 Emissions (controlled) (AP-42 Table 11.19.2-2, 8/04, Fines Screening (controlled))

Emission factor: 0.0022 lb PM10/ton material

Calculation: $49.604 \text{ T material/hr} * 8760 \text{ hr/yr} * 0.0022 \text{ lb PM10/T material} / 2000 \text{ lb PM10/T PM10} = 0.48 \text{ T PM10/yr} * (1 - 90\%) \text{ control} = 0.047798 \text{ T PM10/yr}$

PM2.5 Emissions (controlled) (AP-42 Table 11.19.2-2, 8/04, Screening (controlled))

Emission factor: 0.000050 lb PM2.5/ton material

Calculation: $49.604 \text{ T material/hr} * 8760 \text{ hr/yr} * 0.00005 \text{ lb PM}_{2.5}/\text{T material} / 2000 \text{ lb PM}_{2.5}/\text{T PM}_{2.5} = 0.01 \text{ T PM}_{2.5}/\text{yr} * (1 - 90\%) \text{ control} = 0.001086 \text{ T PM}_{2.5}/\text{yr}$

Discharge feeder to belt

Max process rate: 55 T/hr

Max hours of operations: 8760 hr/yr

PM Emissions (AP-42 Table 11.19.2-2, 8/04, Unloading - Fragmented Stone [SCC 3-05-020-31])

Emission factor: 0.000016 lb PM/ton material

Calculation: $55.116 \text{ T material/hr} * 8760 \text{ hr/yr} * 0.000016 \text{ lb PM}/\text{T material} / 2000 \text{ lb PM}/\text{T PM} = 0.0039 \text{ T PM}/\text{yr} * (1 - 90\%) \text{ control} = 0.000386 \text{ T PM}/\text{yr}$

PM10 Emissions (AP-42 Table 11.19.2-2, 8/04)

Emission factor: 0.000016 lb PM10/ton material

Calculation: $55.116 \text{ T material/hr} * 8760 \text{ hr/yr} * 0.000016 \text{ lb PM}_{10}/\text{T material} / 2000 \text{ lb PM}_{10}/\text{T PM}_{10} = 0.0039 \text{ T PM}_{10}/\text{yr} * (1 - 90\%) \text{ control} = 0.000386 \text{ T PM}_{10}/\text{yr}$

PM2.5 Emissions (AP-42 Table 11.19.2-2, 8/04)

Emission factor: 0.000016 lb PM2.5/ton material

Calculation: $55.116 \text{ T material/hr} * 8760 \text{ hr/yr} * 0.000016 \text{ lb PM}_{2.5}/\text{T material} / 2000 \text{ lb PM}_{2.5}/\text{T PM}_{2.5} = 0.0039 \text{ T PM}_{2.5}/\text{yr} * (1 - 90\%) \text{ control} = 0.000386 \text{ T PM}_{2.5}/\text{yr}$

Optical sorter #1

Max process rate: 44 T/hr

Max hours of operations: 8760 hr/yr

PM Emissions (AP-42 Table 11.19.2-2, 8/04, Conveyor Transfer Point [SCC 3-05-020-06])

Emission factor: 0.0030 lb PM/ton material

Calculation: $44.092 \text{ T material/hr} * 8760 \text{ hr/yr} * 0.0030 \text{ lb PM}/\text{T material} / 2000 \text{ lb PM}/\text{T PM} = 0.5794 \text{ T PM}/\text{yr} * (1 - 90\%) \text{ control} = 0.058 \text{ T PM}/\text{yr}$

PM10 Emissions (AP-42 Table 11.19.2-2, 8/04)

Emission factor: 0.00110 lb PM10/ton material

Calculation: $44.092 \text{ T material/hr} * 8760 \text{ hr/yr} * 0.00110 \text{ lb PM}_{10}/\text{T material} / 2000 \text{ lb PM}_{10}/\text{T PM}_{10} = 0.2124 \text{ T PM}_{10}/\text{yr} * (1 - 90\%) \text{ control} = 0.021 \text{ T PM}_{10}/\text{yr}$

PM2.5 Emissions (AP-42 Table 11.19.2-2, 8/04)

Emission factor: 0.00110 lb PM2.5/ton material

Calculation: $44.092 \text{ T material/hr} * 8760 \text{ hr/yr} * 0.00110 \text{ lb PM}_{2.5}/\text{T material} / 2000 \text{ lb PM}_{2.5}/\text{T PM}_{2.5} = 0.2124 \text{ T PM}_{2.5}/\text{yr} * (1 - 90\%) \text{ control} = 0.0021 \text{ T PM}_{2.5}/\text{yr}$

Optical sorter #2

Max process rate: 44 T/hr

Max hours of operations: 8760 hr/yr

PM Emissions (AP-42 Table 11.19.2-2, 8/04, Conveyor Transfer Point [SCC 3-05-020-06])

Emission factor: 0.0030 lb PM/ton material

Calculation: $44.092 \text{ T material/hr} * 8760 \text{ hr/yr} * 0.0030 \text{ lb PM}/\text{T material} / 2000 \text{ lb PM}/\text{T PM} = 0.5794 \text{ T PM}/\text{yr} * (1 - 90\%) \text{ control} = 0.058 \text{ T PM}/\text{yr}$

PM10 Emissions (AP-42 Table 11.19.2-2, 8/04)

Emission factor: 0.0030 lb PM10/ton material

Calculation: $44.092 \text{ T material/hr} * 8760 \text{ hr/yr} * 0.0030 \text{ lb PM}_{10}/\text{T material} / 2000 \text{ lb PM}_{10}/\text{T PM}_{10} = 0.2124 \text{ T PM}_{10}/\text{yr} * (1 - 90\%) \text{ control} = 0.0021 \text{ T PM}_{10}/\text{yr}$

PM2.5 Emissions (AP-42 Table 11.19.2-2, 8/04)

Emission factor: 0.0030 lb PM2.5/ton material

Calculation: $44.092 \text{ T material/hr} * 8760 \text{ hr/yr} * 0.0030 \text{ lb PM2.5/T material} / 2000 \text{ lb PM2.5/T PM2.5} = 0.02124 \text{ T PM2.5/yr} * (1 - 90\%) \text{ control} = 0.0021 \text{ T PM2.5/yr}$

Feeder for bypassing sorter #1

Max process rate: 44 T/hr

Max hours of operations: 8760 hr/yr

PM Emissions (AP-42 Table 11.19.2-2, 8/04, Unloading - Fragmented Stone [SCC 3-05-020-31])

Emission factor: 0.000016 lb PM/ton material

Calculation: $44.092 \text{ T material/hr} * 8760 \text{ hr/yr} * 0.000016 \text{ lb PM/T material} / 2000 \text{ lb PM/T PM} = 0.0031 \text{ T PM/yr} * (1 - 90\%) \text{ control} = 0.000309 \text{ T PM/yr}$

PM10 Emissions (AP-42 Table 11.19.2-2, 8/04)

Emission factor: 0.000016 lb PM10/ton material

Calculation: $44.092 \text{ T material/hr} * 8760 \text{ hr/yr} * 0.000016 \text{ lb PM10/T material} / 2000 \text{ lb PM10/T PM10} = 0.0031 \text{ T PM10/yr} * (1 - 90\%) \text{ control} = 0.000309 \text{ T PM10/yr}$

PM2.5 Emissions (AP-42 Table 11.19.2-2, 8/04)

Emission factor: 0.000016 lb PM2.5/ton material

Calculation: $44.092 \text{ T material/hr} * 8760 \text{ hr/yr} * 0.000016 \text{ lb PM2.5/T material} / 2000 \text{ lb PM2.5/T PM2.5} = 0.0031 \text{ T PM2.5/yr} * (1 - 90\%) \text{ control} = 0.000309 \text{ T PM2.5/yr}$

Feeder for bypassing sorter #2

Max process rate: 44 T/hr

Max hours of operations: 8760 hr/yr

PM Emissions (AP-42 Table 11.19.2-2, 8/04, Unloading - Fragmented Stone [SCC 3-05-020-31])

Emission factor: 0.000016 lb PM/ton material

Calculation: $44.092 \text{ T material/hr} * 8760 \text{ hr/yr} * 0.000016 \text{ lb PM/T material} / 2000 \text{ lb PM/T PM} = 0.0031 \text{ T PM/yr} * (1 - 90\%) \text{ control} = 0.000309 \text{ T PM/yr}$

PM10 Emissions (AP-42 Table 11.19.2-2, 8/04)

Emission factor: 0.000016 lb PM10/ton material

Calculation: $44.092 \text{ T material/hr} * 8760 \text{ hr/yr} * 0.000016 \text{ lb PM10/T material} / 2000 \text{ lb PM10/T PM10} = 0.0031 \text{ T PM10/yr} * (1 - 90\%) \text{ control} = 0.000309 \text{ T PM10/yr}$

PM2.5 Emissions (AP-42 Table 11.19.2-2, 8/04)

Emission factor: 0.000016 lb PM2.5/ton material

Calculation: $44.092 \text{ T material/hr} * 8760 \text{ hr/yr} * 0.000016 \text{ lb PM2.5/T material} / 2000 \text{ lb PM2.5/T PM2.5} = 0.0031 \text{ T PM2.5/yr} * (1 - 90\%) \text{ control} = 0.000309 \text{ T PM2.5/yr}$

Dewatering system

Max process rate: 6T/hr

Max hours of operations: 8760 hr/yr

PM Emissions (controlled) (AP-42 Table 11.19.2-2, 8/04, Fines Screening (controlled))

Emission factor: 0.0036 lb PM/ton material

Calculation: $5.5116 \text{ T material/hr} * 8760 \text{ hr/yr} * 0.0036 \text{ lb PM/T material} / 2000 \text{ lb PM/T PM} = 0.09 \text{ T PM/yr} * (1 - 90\%) \text{ control} = 0.008691 \text{ T PM/yr}$

PM10 Emissions (controlled) (AP-42 Table 11.19.2-2, 8/04, Fines Screening (controlled))

Emission factor: 0.0022 lb PM10/ton material

Calculation: $5.5116 \text{ T material/hr} * 8760 \text{ hr/yr} * 0.0022 \text{ lb PM10/T material} / 2000 \text{ lb PM10/T PM10} = 0.05 \text{ T PM10/yr} * (1 - 90\%) \text{ control} = 0.005311 \text{ T PM10/yr}$

PM2.5 Emissions (controlled) (AP-42 Table 11.19.2-2, 8/04, Screening (controlled))

Emission factor: 0.000050 lb PM2.5/ton material

Calculation: $5.5116 \text{ T material/hr} * 8760 \text{ hr/yr} * 0.00005 \text{ lb PM2.5/T material} / 2000 \text{ lb PM2.5/T PM2.5} = 0.00 \text{ T PM2.5/yr} * (1 - 90\%) \text{ control} = 0.000121 \text{ T PM2.5/yr}$

Conveyors, Inside and Outside – Emissions counted in Optical Wash Plant (EU 099):

8,760 hr/yr; maximum annual operating hour

90% Enclosed outside conveyor

98% Enclosed indoor conveyor

Design TP (tph)	Cntrl Eff	Name	Control	Where	What	EF source: AP-42 -	lb PM/ton EF	PM T/yr	lb PM10/ton EF	PM10 T/yr	lb PM2.5/ton EF	PM2.5 T/yr	Notes
110	98%	Conveyor	fully enclosed	outside	raw ore	13.2.4 eq 1	0.00531	0.051	0.00251	0.024	0.00038	0.004	
110	90%	Conveyor	fully enclosed	outside	2"-4" raw ore	13.2.4 eq 1	0.00531	0.256	0.00251	0.121	0.00038	0.018	
61	98%	Conveyor	fully enclosed	inside	dry fines, < 3/4"	Tbl 11.19.2-2	0.003	0.016	0.0011	0.006	0.0011	0.006	Assumes PM10 = PM2.5
66		Conveyor - external to pile	enclosed feed point	outside	dry & wet fines, <3/4"	13.2.4 eq 1	0.00531	0.154	0.00251	0.073	0.00038	0.011	Assumes no control since only the feed point is controlled and material conveyed is fines
50	98%	Conveyor to dry screen	fully enclosed	inside	sized ore, dry	2	0.003	0.013	0.0011	0.005	0.0011	0.005	Assumes PM10 = PM2.5
44	98%	Conveyor to feed optical sorters	fully enclosed	inside	sized ore, washed	Tbl 11.19.2-2	0.003	0.012	0.0011	0.004	0.0011	0.004	Assumes PM10 = PM2.5
44	98%	Bypass chute	fully enclosed	inside	sized ore, washed	Tbl 11.19.2-2	0.003	0.012	0.0011	0.004	0.0011	0.004	Assumes PM10 = PM2.5
44	98%	Bypass conveyor to sorter #2	fully enclosed	inside	sized ore, washed	Tbl 11.19.2-2	0.003	0.012	0.0011	0.004	0.0011	0.004	Assumes PM10 = PM2.5
44	98%	Bypass chute	fully enclosed	inside	sized ore, washed	Tbl 11.19.2-2	0.003	0.012	0.0011	0.004	0.0011	0.004	Assumes PM10 = PM2.5
44	98%	Reversing belt for product discharge	fully enclosed	inside	sized ore, washed	Tbl 11.19.2-2	0.003	0.012	0.0011	0.004	0.0011	0.004	Assumes PM10 = PM2.5
44	98%	Reversing belt for product discharge	fully enclosed	inside	sized ore, washed	Tbl 11.19.2-2	0.003	0.012	0.0011	0.004	0.0011	0.004	Assumes PM10 = PM2.5
44	98%	Conveyor for low color ore	fully enclosed	inside	sized ore, washed	Tbl 11.19.2-2	0.003	0.012	0.0011	0.004	0.0011	0.004	Assumes PM10 = PM2.5
44	90%	Conveyor for low color ore to pile	enclosed feed point	outside	sized ore, washed	13.2.4 eq 1	0.00531	0.102	0.00251	0.048	0.00038	0.007	Assumes 90% control because fines have been removed from material and feed point is controlled
44	90%	Radial conveyor for high bright talc to pile	enclosed feed point	outside		13.2.4 eq 1	0.00531	0.102	0.00251	0.048	0.00038	0.007	Assumes 90% control because fines have been removed from

Design TP (tph)	Cntrl Eff	Name	Control	Where	What	EF source: AP-42 -	lb PM/ton EF	PM T/yr	lb PM10/ton EF	PM10 T/yr	lb PM2.5/ton EF	PM2.5 T/yr	Notes
													material and feed point is controlled
13	90%	Conveyor for off spec ore to pile	enclosed feed point	outside	sized ore, washed	13.2.4 eq 1	0.00531	0.031	0.00251	0.015	0.00038	0.002	Assumes 90% control because fines have been removed from material and feed point is controlled

PM TPY

PM₁₀ TPY

PM_{2.5} TPY

Total Emissions Optical Sorter Wash Plant (EU 099)

0.81

0.37

0.09

V. Existing Air Quality

The BMI facility is located in the East ½ of Section 17, Township 8 South, Range 9 West, in Beaverhead County, Montana. Beaverhead County is classified as “Better than National Standards” or unclassifiable/attainment of the National Ambient Air Quality Standards (NAAQS) for all criteria pollutants.

VI. Ambient Air Impact Analysis

The Department determined that the impacts from this permitting action will be minor because this permit action is considered a de minimis action. The overall emission will decrease with the use of the control equipment. Emissions are considered minor and below de minimis thresholds, therefore, the Department believes it will not cause or contribute to a violation of any ambient air quality standard.

VII. Taking or Damaging Implication Analysis

As required by 2-10-105, MCA, the Department conducted the following private property taking and damaging assessment.

YES	NO	
X		1. Does the action pertain to land or water management or environmental regulation affecting private real property or water rights?
	X	2. Does the action result in either a permanent or indefinite physical occupation of private property?
	X	3. Does the action deny a fundamental attribute of ownership? (ex.: right to exclude others, disposal of property)
	X	4. Does the action deprive the owner of all economically viable uses of the property?
	X	5. Does the action require a property owner to dedicate a portion of property or to grant an easement? [If no, go to (6)].
		5a. Is there a reasonable, specific connection between the government requirement and legitimate state interests?
		5b. Is the government requirement roughly proportional to the impact of the proposed use of the property?
	X	6. Does the action have a severe impact on the value of the property? (consider economic impact, investment-backed expectations, character of government action)
	X	7. Does the action damage the property by causing some physical disturbance with respect to the property in excess of that sustained by the public generally?
	X	7a. Is the impact of government action direct, peculiar, and significant?
	X	7b. Has government action resulted in the property becoming practically inaccessible, waterlogged or flooded?
	X	7c. Has government action lowered property values by more than 30% and necessitated the physical taking of adjacent property or property across a public way from the property in question?
	X	Takings or damaging implications? (Taking or damaging implications exist if YES is checked in response to question 1 and also to any one or more of the following questions: 2, 3, 4, 6, 7a, 7b, 7c; or if NO is checked in response to questions 5a or 5b; the shaded areas)

VIII. Montana Environmental Policy Act

The current permit action has been completed in accordance with the ARM 17.8.745(1) and is considered an administrative action; therefore, an Environmental Assessment is not required.

Analysis Prepared By: Rhonda Payne
Date: July 8, 2018